## ABSTRACT OF THE DISCLOSURE

A technique for managing a queue so as to distribute losses among different service classes is disclosed. In one embodiment, the technique is realized by classifying an incoming packet into one of a plurality of classes. Each class has an associated weighting factor. The system continuously monitors a queue size and determines an overall packet drop probability based on the actual queue size and a target queue size and calculates a target class drop probability based on the overall packet drop probability and the weighting factor. Finally, the system makes a comparison based on the target class drop probability and a selected value and decides whether to drop the incoming packet based on a result of the comparison. If losses are unavoidable in the system, the technique ensures that the losses will be distributed among the different service classes in inverse proportion to the service price of each class.